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10/074,297	02/13/2002	Dimitrios Sideris	3877 P 002	4890

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EXAMINER

SNAY, JEFFREY R

ART UNIT

PAPER NUMBER

(74)

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,297

Applicant(s)

SIDERIS, DIMITRIOS

Examiner

Jeffrey R. Snay

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1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 17-27 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Specification

1. The amendment filed 03/29/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Figures A-C.

Applicant is required to cancel the new matter in the reply to this Office Action.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 22-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The reasons for this rejection are set forth in paragraph 2 of the last Office action.

4. Claim 24 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 24 depends from claim 23 but merely reiterates what is already recited in claim 23.

Claim Rejections - 35 USC § 102

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-13, 17-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito ('849).

The disclosure of Saito is detailed in the last Office action. Additionally, it is noted here that Saito describes application of the separation method to macromolecules, living cells, or other particles. Regarding the presently recited electric field which varies along the channel, see Saito at Figures 1, 5 and 7. Specifically, Figure 1 depicts an electric field which varies with a power of r equal to 1, and Figure 1 depicts a field which varies with a power of r greater than 1. Saito teach the provision of a gradient buffer solution along the channel in combination with opposing anode and cathode in order to accomplish the disclosed shape of electric field. Both the speed of rotation and applied electric potential are controlled in order to effect the desired separation and positioning of particles (see e.g. Figure 3).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito ('849) in view of Ivory et al ('258).

The reasons for this rejection are as set forth in the last office action. Specifically, while Saito discloses only the provision of a gradient concentration of buffer solution as the means for providing the electrical force gradient, Ivory et al disclose the alternative means of providing an electrode array along the separation channel. Ivory et al teach that the so provided array enables dynamic control over the applied electrical gradient, in order to enable greater control over the separation process. It would have been obvious to one of ordinary skill in the art to modify the device of Saito to include an electrode array, as per the teaching of Ivory et al, in order to obtain the benefits of dynamic control. It is noted that such an electrode array would have inherently created what applicant claims as a resistance which varies along the length of the cavity.

Allowable Subject Matter

10. Claims 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or fairly suggest the presently claimed

structure in which the width of the separation channel is varied along its length. It is noted that the instant specification teaches such dimensional variation as being employed in order to create an electric field gradient. The prior art relied upon above teaches the desirability of creating such an electric field gradient, but fails to suggest that the electric gradient could be achieved by providing a varied width of the channel. Applicant is requested to provide any prior art that would be pertinent to this issue, if such prior art is known.

Response to Arguments

12. Applicant's arguments filed 03-29-04 have been fully considered but they are not persuasive.

In response to the rejection of claims 22-27, under 35 USC 112, second paragraph, applicant argues that "a spectrometer describes an apparatus or means for separating articles." If applicant's proposed definition could be accepted, indeed the claim would be definite because it recites elements pertinent to the separation of articles. However, the term "spectrometer" has nothing to do with separation of articles. A spectrometer is "an instrument used for measuring wavelengths of light spectra" (Webster's Collegiate Dictionary, 10th edition). The instant claims recite a spectrometer but clearly lack even a single element related to the measurement of light.

Applicant further traverses the combination of Saito with Ivory et al on the grounds that Ivory et al utilizes a hydrodynamic force rather than a centrifugal force. This is, however, a difference without a distinction. Both Saito and Ivory et al disclose


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the application of an electrical force to counterbalance an oppositely directed physical force. The fact that the physical force to be counteracted is of a different origin is immaterial to the grounds of rejection.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. Snay whose telephone number is (571) 272-1264. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrey R. Snay
Primary Examiner
Art Unit 1743

jrs